Behavior Modification
Volume 31 Number 3
May 2007 279-297

10.1177/0145445506293784
http://bmo.sagepub.com
hosted at
http://online.sagepub.com

Are Parent-Reported Outcomes for Self-Directed or Telephone-Assisted Behavioral Family Intervention Enhanced if Parents Are Observed?

Alina Morawska
Matthew R. Sanders
University of Queensland, Brisbane, Australia

The study examined the effects of conducting observations as part of a broader assessment of families participating in behavior family intervention (BFI). It was designed to investigate whether the observations improve intervention outcomes. Families were randomly assigned to different levels of BFI or a waitlist control condition and subsequently randomly assigned to either observation or no-observation conditions. This study demonstrated significant intervention and observation effects. Mothers in more intensive BFI reported more improvement in their child's behavior and their own parenting. Observed mothers reported lower intensity of child behavior problems and more effective parenting styles. There was also a trend for less anger among mothers who were observed and evidence of an observation-intervention interaction for parental anger, with observed mothers in more intensive intervention reporting less anger compared to those not observed. Implications for clinical and research intervention contexts are discussed.

Keywords: *behavioral family intervention; observational assessment; expectancy effects*

Observation of behavior is a fundamental part of behavioral theory and therapy. It is through direct observation that interpretations are made about the nature of behavior, its antecedents, and its consequences. Observational methods have a long history within the field of behavioral research (Hartmann & Wood, 1990; Tryon, 1998), including within the field of behavioral family intervention (BFI).

Observational methods have many advantages over methods such as self-report; however, there are also considerable difficulties in using this approach. Observations provide a direct means of assessing behavior, where behavior can be defined consistently and reliably (Aspland & Gardner, 2003; Gardner, 2000). There is evidence that observational data involve less systematic bias than do parent- or teacher-report measures (Eddy, Dishion, & Stoolmiller, 1998; Patterson, 1982; Patterson, Reid, & Dishion, 1992).

There are a number of disadvantages or difficulties in conducting observational research. For example, correlations between observed and self-reported behavior are often low (e.g., Robinson & Eyberg, 1981; Webster-Stratton, 1998). Observational research is also very time- and resource-consuming, for both participants and researchers. A final concern to address in observational research is that of participant reactivity, which, if present, raises concerns about the validity of data (Forehand, 1990; Kerig, 2000).

Concerns about the effects of measurement, or participant reactivity to assessment, have been considered for many years (Rosenthal, 1966). Reactivity can refer to several different effects: (a) reactivity of observational methods, that is, simply being observed changes the behavior being observed; (b) reactivity of observational methods on other assessments, this is when an individual changes his or her self-reports as a result of being observed; and (c) measurement-intervention interaction, where intervention effects are enhanced by observation. Although there is generally a paucity of research conducted examining reactivity effects, some researchers have looked at the first type of reactivity (e.g., Harris & Lahey, 1982; Spencer, Corcoran, Allen, Chinsky, & Veit, 1974).

Studies have demonstrated the importance of examining reactivity effects in family observation (e.g., Johnson & Lobitz, 1974; Lobitz & Johnson, 1975). The researchers asked parents to make their child appear "good" or "bad" during the observation task. They found that regardless of whether parents reported behavior problems in their child or not, they were able to manipulate their own and their child's behavior. In general, however, parents were better at making their children look bad. Similarly, Green, Forehand, and McMahon (1979) found that parents of normal and difficult children could modify their children's behavior in accordance with instruction.

Hartmann and Wood (1990) provide a discussion of factors contributing to reactivity of observational methods. The authors discuss the social desirability of the behaviors to be observed, the characteristics of the participants, the conspicuousness of the observation, observer attributes, and the rationale for observation as important factors influencing reactivity.

For example, if the behavior to be observed is not perceived as socially desirable by the participants, such as physically disciplining children, then parents may be more likely to suppress that behavior in the presence of the observer. Similarly, older children and adults may be more likely to change their behavior in response to being observed because they are more aware of the situation, in contrast to younger children, who may not be aware of the situation and may not be capable of readily modifying their behavior.

In contrast to research examining the reactivity of observational methods, there is, to the authors' knowledge, no empirical research in the BFI field or in the broader literature examining the other types of reactivity effects (reactivity of observational methods on other assessments and measurement-intervention interaction). Although the effects of reactivity of observational methods can be demonstrated by examining differences in observed behavior, the other types of reactivity may be more difficult to detect. These effects can be confirmed by exploring observed participants' responses on self-report measures, when some participants are observed and others are not. Furthermore, it may be difficult to determine whether the effect is one of simple differences in self-reporting or a measurement-intervention interaction.

Clifford and Maisto (2000) reviewed the issue of participant reactivity effects in the context of alcohol research. The authors suggest that although many researchers have alluded to the possible influence of research protocols on clinical outcomes, these have not been tested directly. In the context of alcohol research, research protocols often involve lengthy interviews and long-term follow-up of participants, which may in and of themselves function in a therapeutic manner. The authors concluded that there is some suggestive evidence of the influence of research protocols affecting outcomes, mainly based on researcher impressions. In this case, the authors alluded to measurement-treatment interaction, that is, those individuals who had undergone the assessments subsequently achieved better clinical outcomes following intervention.

The factors that may contribute to the two others types of reactivity have not been elucidated. Observations could serve a motivational role, whereby participants are more committed to the completion of the program knowing that their behavior will be observed. Related to this, the effect could also be one of expectancy enhancement, whereby the observation sets up an expectation that change is anticipated and that it will be directly observed. Expectancies about an intervention can affect the process and outcome of therapy (Glass, Arnkoff, & Shapiro, 2001; Joyce, Ogrodniczuk, Piper, & McCallum, 2003; Tinsley,

Workman, & Kass, 1980), and the anticipation of being observed may change participants' expectancies about the intervention.

Although there has been interest in reactivity effects in the clinical literature, the focus of past research has been on reactivity of observational methods effects, that is, whether the act of being observed affects the behavior being observed. However, it is possible that the observational assessment leads to additional changes in behavior. The question is whether the anticipation that one will be observed has added effects for participants undergoing some type of intervention. To ensure reliable measurement of behavior, it is generally recommended that multiple observational sessions are scheduled (Gardner, 2000; Stoolmiller, Eddy, & Reid, 2000). Given these recommendations in the child intervention literature, it is important to consider the impact of observations and their possible effect on the clinical outcomes of intervention. To date, there are no published investigations examining the possible effects of observations in the BFI field.

The aim of this study was to examine the effects of conducting observations as part of a broader assessment of families participating in a BFI. It was designed to investigate whether conducting observations can affect intervention outcomes. Families were randomly assigned to two different levels of BFI varying in intensity and a waitlist control condition and were subsequently randomly assigned to either observation or no-observation conditions. It was expected that mothers assigned to the intervention conditions would report more improvement in their own and their child's behavior as a result of the intervention compared to mothers who were in the waitlist control group. It was also predicted that mothers who were observed would report more improvement compared to mothers who were not observed. It was expected that the effect would be additive for the two intervention conditions, that is, mothers at each intervention level who were also observed would report greater improvements compared to those who were not observed. No effect of observation was predicted for the waitlist control group. Thus, a synergistic effect was predicted, with observation providing an additive effective in the intervention conditions and no effect expected in the waitlist condition.

This study was part of a larger research project that examined the efficacy and effectiveness of BFI for mothers of toddlers. Only the measures and outcomes related to this study are reported. For further details of the research, see Morawska and Sanders (2006). The focus of this study is on the effects that observation has on self-report measures and not on reactivity effects within the observational context.

Method

Participants

Participants were recruited through child care centers, kindergartens, schools, and playgroups in metropolitan Brisbane, Australia. Media releases were also utilized to gain as wide a participant pool as possible. Overall, 253 mothers contacted the project and expressed their interest in participation. Mothers completed a short, 10-minute telephone screening interview designed to assess the family's suitability for the program and inform the mother of the requirements of the program. The major criteria for eligibility was the presence in the family of a toddler between the ages of 18 and 36 months and that the family lived within the Brisbane metropolitan area. Mothers also had to report significant concerns about their child's behavior. In addition, families were excluded if the child had a disability and/or chronic illness, including language and speech impairment; if the parents were currently seeing a professional for the child's behavior difficulties; if the parents were currently receiving psychological or psychiatric help or counseling (personal or marital); or if the parents were intellectually disabled and/or hearing impaired. In all, 184 families (72.7%) were eligible to participate following the telephone screen.

A total of 126 mothers returned the initial assessment package and were randomly assigned to one of the six conditions. There were similar numbers of boys (50.8%) and girls (49.2%) in the sample, with a mean age of 26.1 months (SD = 5.1). Mothers' mean age was 33.2 (SD = 4.6), with fathers slightly older (M = 35.1, SD = 5.4). Most children lived with parents who were married (85.7%) in their original families (89.7%). A large proportion of both parents had a university education (57.9% of mothers and 48.3% of fathers). Nearly 95% of fathers were employed for an average of 41.9 hours per week (SD = 11.5). Of mothers, 50% were employed, working an average of 22.5 hours per week (SD = 11.6). Of families, 8.0% had an annual income of less than Aus$25,000, 20.0% had an income between Aus$25,000 and Aus$50,000, 35.2% had an annual income between Aus$50,000 and Aus$70,000, and 36.8% had an annual income of more than Aus$70,000.[1]

Measures

Child behavior. Toddler behavior was assessed using the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), a 36-item measure of

parental perceptions of disruptive behavior in children between the ages of 2 and 16. It consists of a measure of the frequency of disruptive behaviors (Intensity) rated on a 7-point scale, ranging from *never* (1) to *always* (7), and a measure of the number of behaviors that are a problem for parents (Problem), using a yes-no format. In this sample, there was good internal consistency ($\alpha = .91$ and .87, respectively). The ECBI is valid and reliable and has good test-retest reliability ($r = .86$). Scores greater than 131 on the Intensity scale and greater than 15 on the Problem scale are indicative of difficulties in the clinical range.

Parenting style. The Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) is a 30-item questionnaire measuring three dysfunctional discipline styles. Its yields three factors: laxness (permissive discipline), over-reactivity (authoritarian discipline, displays of anger, meanness, and irritability), and verbosity (overly long reprimands or reliance on talking). Each scale and the total score had good internal consistency ($\alpha = .85$, .81, .64, and .86, respectively), and the scale has good test-retest reliability ($r = .83$, .82, .79, and .84, respectively). The PS is a valid and reliable scale and is recommended as a tool for measuring parenting skill (Locke & Prinz, 2002). The total score was used for analyses in this study, and the clinical cutoff is 3.1.

Parental anger. The Parental Anger Inventory (PAI; Hansen & Sedlar, 1998) assesses anger experienced by parents in response to child-related situations. It consists of a measure of how much a situation makes the parent feel angry (Extent) rated on a 5-point scale, ranging from *not at all* (1) to *extremely* (5), and a measure of the number of behaviors that are a problem for parents (Problem), using a yes-no format. The scale in this sample had good internal consistency for the Problem and Extent scales ($\alpha = .92$ and .95, respectively) and is moderately correlated with other measures of anger and child behavior.

Design

The design of the study is a repeated measured design involving two observation—observed versus not observed—and three intervention conditions—self-directed BFI (SD-BFI) versus telephone-assisted, self-directed BFI (TASD-BFI) versus waitlist control (WLC)—at two time points (pre- and postintervention).

Procedure

Following telephone screening, eligible families received the parent-report measures, and on return of these, they received a 10- to 20-minute, semi-structured interview. Families were randomly assigned after assessment to 1 of 3 intervention conditions: 42 participants were assigned to the SD-BFI condition, 43 to the TASD-BFI condition, and 41 to the WLC group.

Randomization was implemented using a list of computer-generated random numbers, and families were assigned sequentially to condition according to the list. Furthermore, a random subset (two fifths) of participants received a home observation of mother-child interaction. Following randomization to intervention condition, families were sequentially assigned to being observed or not, according to a list of computer-generated random numbers. Seventeen participants in the TASD-BFI group were observed, 15 in the SD-BFI condition, and 16 in the WLC group.

Home Observations

Mothers assigned to the observation condition were observed once prior to the start of the intervention and once following the completion of the intervention. The self-report measures were collected prior to observation at preintervention and collected at the observation session at postintervention. Observations of the mother-child interactions took place in the family's home and were 30 minutes in duration. The observation consisted of four segments, including a free play segment with the mother, mother giving a list of simple instructions to the child in the context of play, a clean-up task, and a segment where the mother is engaged in another activity while the child has to amuse himself or herself. No discussions about the content or process of the observations were conducted with mothers during the course of the study.

Intervention

The intervention investigated in this study was the Triple P–Positive Parenting Program, a multilevel, preventively oriented parenting and family support strategy (Sanders, 1999). It aims to prevent behavioral, emotional, and developmental problems in children by enhancing the knowledge, skills, and confidence of parents. Triple P is a BFI based on social learning principles. The distinguishing features of Triple P are program sufficiency, flexible

tailoring to identified risk and protective factors, varied delivery modalities, wide potential reach, and a multidisciplinary approach. The program aims to prevent child problems using a population-level strategy and to intervene to reduce existing problems at the clinical level.

Families in self-directed Triple P (SD-BFI) received program materials along with instructions for completion. The materials included *Every Parent's Self-Help Workbook* (Markie-Dadds, Sanders, & Turner, 1999), tip sheets on various toddler behaviors (Turner, Markie-Dadds, & Sanders, 1996), and the video *Every Parent's Survival Guide* (Sanders, Markie-Dadds, & Turner, 1996). Each week for a period of 10 weeks, mothers were expected to read material for that week and complete a series of workbook tasks. Mothers in both intervention conditions received the same materials. In addition, mothers in the TASD-BFI condition received weekly telephone consultations for the 10 weeks of the program.

The weekly telephone consultations were initiated by the clinician and aimed to encourage parents' own problem-solving skills. Parents were prompted to return to the written material rather than rely on the therapist for solutions. The telephone consultation, in addition to providing specific advice and support, also promoted responsibility for changing parents' own and their child's behavior. Discussions were restricted to behavior problems of the target toddler and elaboration of concepts nominated by the parent. Each telephone session lasted a maximum of 30 minutes, and on average the sessions lasted 10.1 minutes. Families completed a mean of 7 telephone consultations (range = 3-10). A postgraduate psychologist who had undergone extensive supervision and clinical training in the delivery of Triple P interventions and who met accreditation requirements for Triple P conducted the telephone consultations. In addition, detailed written protocols and checklists were utilized to ensure intervention integrity and minimize protocol drift during the trial.

Families in both groups were contacted at the end of the program (10 weeks) for postintervention assessment. Those families assigned to the WLC group received no intervention for 10 weeks, completed the parent-report measures and home observations, and then completed the program of their choice.

Statistical Analyses

Preliminary analyses included ANOVA for continuous variables and chi-square tests for categorical variables on all sociodemographic variables and outcome variables to check for adequate randomization. Main outcome

analyses involved repeated-measures ANOVA for short-term intervention effects. The independent variables were the level of intervention (SD-BFI vs. TASD-BFI vs. WLC) and whether or not the family was observed. The dependent variables were child behavior (ECBI Intensity and Problem), parenting style (PS Total), and parental anger (PAI Extent).

Results

Preliminary analyses using ANOVA for continuous variables and chi-square tests for categorical variables on all dependent variables were used to check for adequate randomization. There were no significant differences across the analyses, indicating that the randomization process resulted in groups that were not significantly different prior to intervention.

Attrition

Overall, a very high retention rate at postintervention was accomplished, with 112 of the original 126 (88.9%) families completing postassessment. Only 1 (1%) participant withdrew from the study, in the WLC group, shortly following randomization. A further 8 (6.3%) participants in the SD-BFI group, 2 (1.6%) participants in the TASD-BFI group, and 3 (2.4%) participants in the WLC group did not complete postassessment. There were no significant differences in the rates of attrition across the three conditions, $\chi^2(2, 126) = 4.57$, *ns*. There were no significant differences between those who completed the postassessment and those who did not.

Intervention Effects

Intervention effects were analyzed by repeated measures ANOVA, pre- and postintervention. Pre- and postintervention scores for the three conditions and two observation conditions are reported in Table 1.

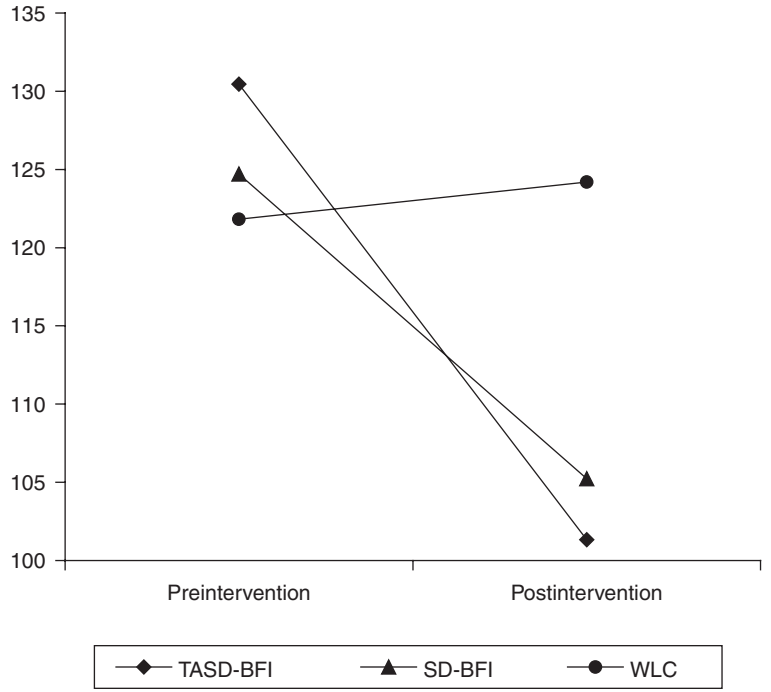
Significant effects of time on all measures were qualified by significant Time × Intervention interactions (Table 1), indicating significant intervention effects across measures, consistent with previous analyses of this sample (Morawska & Sanders, 2006). There was a significant Time × Observation Condition effect for ECBI Intensity and PS Total, $F(1, 103) = 10.55$, $p < .05$, and $F(1, 103) = 6.10$, $p < .05$, respectively, indicating that parents who were observed reported greater improvement in their child's behavior and in their parenting style. There was also a trend for Time × Observation Condition

Table 1
Short-Term Intervention Effects for Child Behavior and Parenting Variables

	Preintervention		Postintervention		Time × Intervention	
	Observed	Not Observed	Observed	Not Observed	$F(2, 103)$	p
ECBI Intensity						
TASD-BFI	130.45 (39.83)	119.41 (23.27)	101.33 (21.82)	107.67 (20.97)		
SD-BFI	124.71 (23.92)	111.20 (24.90)	105.23 (25.69)	116.32 (24.04)	9.68	< .001
WLC	121.81 (28.81)	118.59 (20.23)	124.20 (32.79)	122.86 (24.13)		
ECBI Problem						
TASD-BFI	12.87 (8.77)	11.88 (6.26)	5.73 (5.70)	6.92 (5.62)		
SD-BFI	11.13 (6.56)	9.17 (5.12)	5.93 (4.71)	8.28 (4.35)	10.72	< .001
WLC	10.67 (6.07)	9.86 (6.16)	10.93 (6.96)	10.55 (6.83)		
PS Total						
TASD-BFI	3.41 (0.67)	3.03 (0.42)	2.32 (0.61)	2.58 (0.63)		
SD-BFI	3.03 (0.76)	2.88 (0.68)	2.60 (0.70)	2.58 (0.52)	12.00	< .001
WLC	3.11 (0.57)	2.87 (0.60)	2.96 (0.56)	2.83 (0.52)		
PAI Extent						
TASD-BFI	105.76 (27.38)	89.40 (22.47)	76.19 (16.10)	79.91 (21.05)		
SD-BFI	89.11 (26.65)	92.11 (24.77)	73.82 (21.18)	93.93 (29.11)	5.14	< .01
WLC	90.67 (26.25)	93.33 (26.17)	95.55 (28.08)	87.93 (21.39)		

Note: ECBI = Eyberg Child Behavior Inventory; TASD-BFI = telephone-assisted self-directed behavior family intervention; SD-BFI = self-directed behavior family intervention; WLC = waitlist control; PS = Parenting Scale; PAI = Parental Anger Inventory.

Figure 1
Pre- to Postintervention Eyberg Child Behavior Inventory Intensity Effects for Observed Mothers

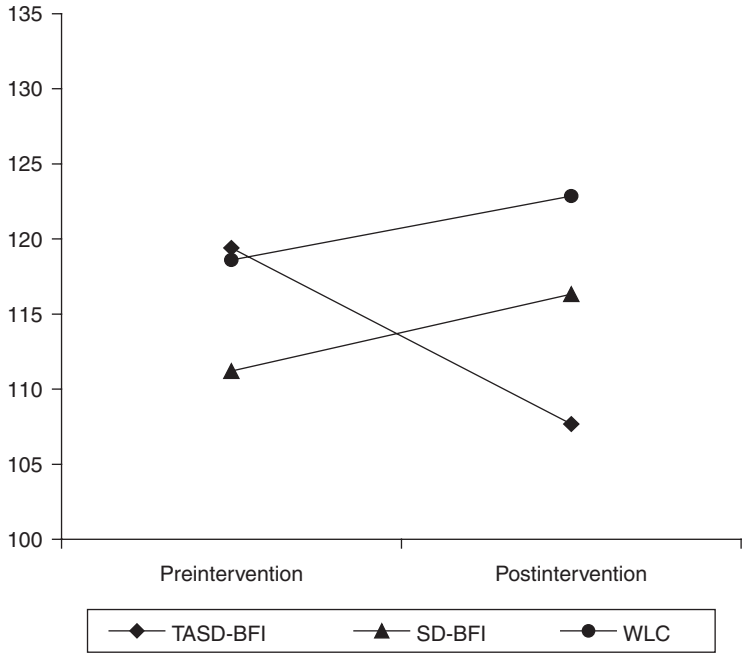


interaction effects for ECBI Problem and parental anger, $F(1, 103) = 3.86$, $p = .052$, and $F(1, 103) = 3.11$, $p = .081$.

A significant Time × Observation Condition × Intervention effect was evident for parental anger, $F(2, 103) = 3.68$, $p < .05$. However, there were no significant three-way interactions for ECBI Intensity, $F(2, 103) = 2.19$, *ns*, for ECBI Problem, $F(2, 103) = .90$, *ns*, or for PS Total, $F(2, 103) = 2.32$, *ns*.

Examination of the figures in Table 1 indicates a clear trend for improvement in the intervention conditions and little or no change in the WLC group. There is also a trend evident in the table demonstrating that mothers who were observed also reported more improvements. Figures 1 and 2 show the pre- to postintervention changes for ECBI Intensity for the observed and not-observed

Figure 2
Pre- to Postintervention Eyberg Child Behavior Inventory Intensity Effects for Not-Observed Mothers

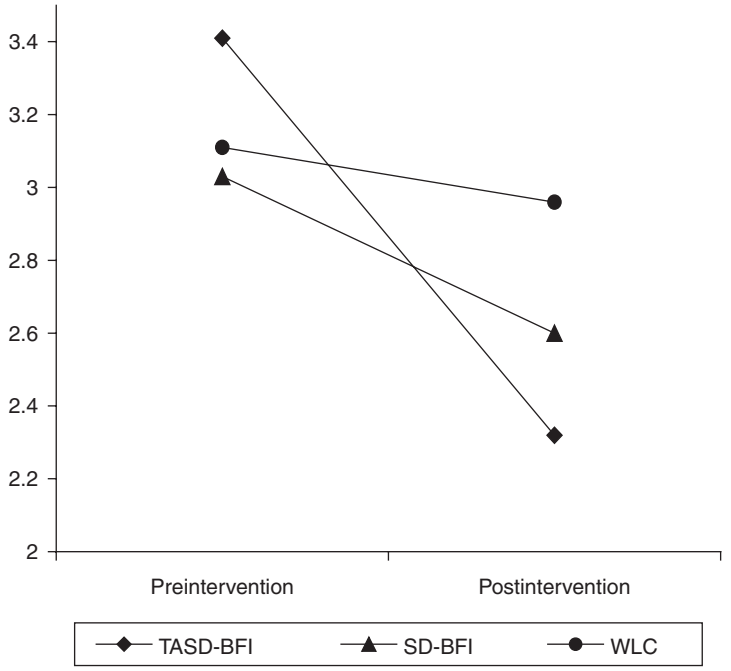


groups, respectively, whereas Figures 3 and 4 show the pre- to postintervention changes for PS Total, respectively. As can be seen from the figures, the strongest effect appears to be for TASD-BFI, across both levels of observation, although there is no change for the WLC group across either level of observation. For SD-BFI, the results appear to be mixed in the sense that those mothers who were observed appear to report more improvement than those who were not observed.

Discussion

The results of this study provide interesting information about the effects of conducting observations. The strength of this study lies in the randomization

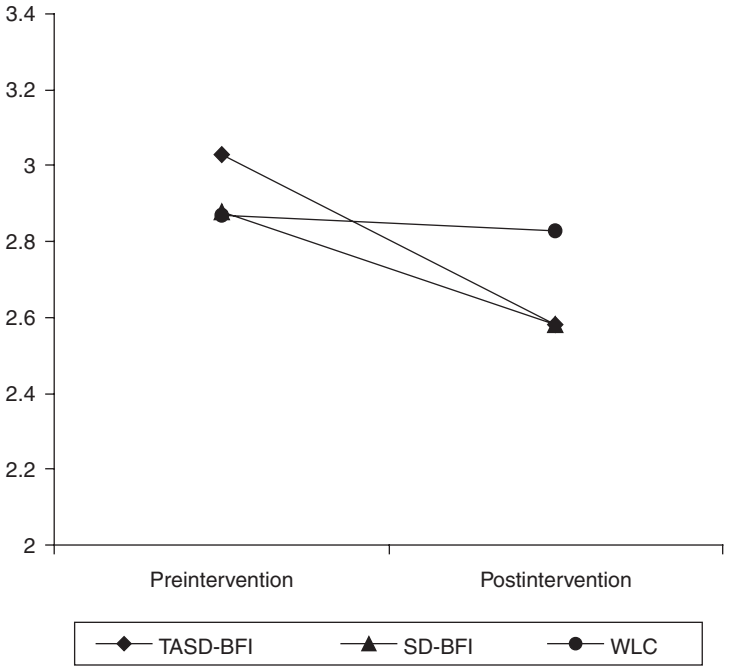
Figure 3
Pre- to Postintervention Parenting Scale Total Effects for Observed Mothers



protocol, where participants were randomly assigned to an intervention condition and to observation level. In terms of the effects of observation, there was evidence of an effect in maternal reports of the intensity of child behavior and their parenting style and trends for parental anger. This outcome is interesting in that the main focus of the study was on the intensity of children's behavior and using parenting strategies to change children's behavior. There was also evidence of an observation-intervention interaction for parental anger.

The study aimed to examine the effects of conducting observations as part of a broader assessment of families participating in a BFI. There was support for the prediction that mothers who were observed would report more improvements compared to mothers who were not observed. This effect was

Figure 4
Pre- to Postintervention Parenting Scale Total Effects for Not-Observed Mothers



evident for maternal reports of their child's behavior, particularly in terms of the intensity of problem behavior, a key outcome measure for this research. Regardless of intervention condition, mothers reported that their child's behavior improved more when they were observed compared to mothers who were not observed. As there was only one significant three-way interaction (for parental anger), it is difficult to determine whether this effect was evident only for those mothers who completed an intervention or whether it was also evident for the WLC condition. Morawska and Sanders (in press) reported detailed multivariate analyses of the intervention outcomes for this sample, indicating that there were no significant changes for the WLC condition from pre- to postintervention and that a tiered effect was evident in terms of participants assigned to differing levels of intervention intensity. Those who were

assigned to more intense intervention reported greater statistical and clinical improvement across a number of measures. Examination of the figures provides support for the idea that there were no changes for the WLC group.

Another interesting observation from the figures is that participants in TASD-BFI seem to report similar improvements regardless of whether they are observed or not. Therefore, it is possible that simply the addition of either observation or telephone consultations to SD-BFI leads to better intervention outcomes. The telephone consultations are based on a self-regulatory model, and it is assumed that the telephone consultations increase parents' self-regulatory skills, such as self-management, personal agency, and self-efficacy. However, this assumption has not been tested specifically, and it is possible that the consultations serve a motivational function. In this manner, the addition of either observations or telephone consultations could lead to increases in parents' motivation and thus improved intervention outcomes. An important area for future research is to determine the putative mechanisms related to both telephone consultations and observations and to examine whether their effects act independently and are additive or whether they are related and thus interactive.

An important question to address is the underlying nature of the effect. The observations could serve a motivational role, whereby mothers are more committed to the completion of the program knowing that their behavior will be observed. Related to this, the effect could also be one of expectancy enhancement, whereby the observation sets up an expectation that change is anticipated and that it will be directly observed. Expectancies about an intervention can affect the process and outcome of therapy (Glass et al., 2001; Joyce et al., 2003; Tinsley et al., 1980), and the process of being observed at preintervention may have changed mothers' expectancies about the intervention.

This study has demonstrated that being observed can have an impact on the outcomes of an intervention, with implications for research outcomes. Given the impact of observations, it may be difficult to compare intervention outcomes across studies that have used different protocols in relation to observations or ones where observations have not been included. It is not clear at this stage whether multiple observation sessions would have additional effects. An intervention effect may be enhanced by observations, which suggests the need to carefully evaluate the effect of observational measures for any given intervention outcome. For example, one implication is that interventions that include observations in research settings may not generalize to real-world settings when observations are not included as part of the intervention. Similarly, it may be important to investigate the potential durability of the impact of observation on intervention outcomes. Specifically, the

issue is whether the effects would generalize beyond assessment settings and over time.

From a clinical perspective, these findings have significant implications, suggesting that the inclusion of observations can affect the outcomes for a family across a range of variables. Mothers who were observed reported more improvements in their child's behavior and reductions in their own dysfunctional parenting; thus, it may be important to examine ways in which observations can be included in standard clinical practice and in future research of intervention effects. In this study, the observations were conducted in the mothers' home and were videotaped. To reduce the resource intensiveness of the observations, families could tape-record or videotape segments of their day-to-day life and send these in to their clinic or research setting on a regular basis. The clinical feasibility of implementing this kind of approach needs to be further investigated to ensure the most efficient and effective method of improving intervention outcomes.

One of the main limitations of this study is the small and unequal sample sizes in each of the cells. Fewer participants were observed across the intervention conditions, which limits the reliability and power of the analyses. This may have contributed to the lack of significant three-way interaction effects. In addition, high variability because of the nature of the sample may also have lowered power to detect significant interaction effects. Examination of the figures provides some evidence to support this idea, as there is a clear trend for differential effects across levels of observation. Future studies would need to focus on ensuring equal sample sizes across different levels of the independent variables. A further limitation of the study was that there were no assessments of the mechanisms of how the observations affected intervention outcomes. Assessment of parental motivations and expectancies for those who are observed versus those who are not observed would clarify the nature of the effect. It would be important to gain other measures of family functioning to triangulate the maternal self-reports and provide information as to whether the effect is one of reactivity of the observations on other assessments. Finally, the sample for this study included families both in the clinically elevated range on child behavior and families who reported child behavior in the normal range. Given the small sample size per cell, it was not possible to evaluate differences between those in the clinical and nonclinical ranges. It would be interesting to examine if the effects demonstrated in this study hold for clinical and nonclinical samples.

The results of this study, although preliminary in nature, open new possibilities for enhancing intervention outcomes in BFI but also potentially other

forms of intervention. The finding that the observations can significantly affect intervention outcomes is one that, to the authors' knowledge, has not previously been demonstrated. The findings have implications for intervention delivery at a clinical level but also at a research level. Given the unique findings of this study, it is important that future research focuses on the elements of the observation that contribute to the effect and clearly delineate the mechanisms involved.

Note

1. The average annual income in Australia is Aus$39,338 (Australian Bureau of Statistics, 2002).

References

Arnold, D. S., O'Leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment, 5*, 137-144.

Aspland, H., & Gardner, F. (2003). Observational measures of parent-child interaction: An introductory review. *Child and Adolescent Mental Health, 8*, 136-143.

Australian Bureau of Statistics. (2002). *2001 census data*. Retrieved June 17, 2005, from http://www.abs.gov.au

Clifford, P. R., & Maisto, S. A. (2000). Subject reactivity effects and alcohol treatment outcome research. *Journal of Studies on Alcohol, 61*, 787-793.

Eddy, J. M., Dishion, T., & Stoolmiller, M. (1998). The analysis of intervention change in children and families: Methodological and conceptual issues embedded in intervention studies. *Journal of Abnormal Child Psychology, 26*, 53-71.

Eyberg, S. M., & Pincus, D. (1999). *Eyberg Child Behavior Inventory and Sutter-Eyberg Student Behavior Inventory–Revised: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Forehand, R. (1990). Families with a conduct problem child. In G. H. Brody & I. E. Sigel (Eds.), *Methods of family research: Biographies of research projects. Vol. II: Clinical Populations* (pp. 1-30). Hillsdale, NJ: Lawrence Erlbaum.

Gardner, F. (2000). Methodological issues in the direct observation of parent-child interaction: Do observational findings reflect the natural behavior of participants? *Clinical Child and Family Psychology Review, 3*, 185-198.

Glass, C. R., Arnkoff, D. B., & Shapiro, S. J. (2001). Expectations and preferences. *Psychotherapy, 38*, 455-461.

Green, K. D., Forehand, R., & McMahon, R. J. (1979). Parental manipulation of compliance and non-compliance in normal and deviant children. *Behavior Modification, 3*, 245-266.

Hansen, D. J., & Sedlar, G. (1998). *Manual for the PAI: The Parental Anger Inventory*. Lincoln: University of Nebraska, Clinical Psychology Training Program.

Harris, F. C., & Lahey, B. B. (1982). Subject reactivity in direct observational assessment: A review and critical analysis. *Clinical Psychology Review, 2*, 523-538.

Hartmann, D. P., & Wood, D. D. (1990). Observational methods. In M. Hersen & A. E. Kazdin (Eds.), *International handbook of behavior modification and therapy* (2nd ed., pp. 107-138). New York: Plenum.

Johnson, S., & Lobitz, G. (1974). Parental manipulation of child behaviour in home observations. *Journal of Applied Behavior Analysis, 7*, 23-31.

Joyce, A. S., Ogrodniczuk, J. S., Piper, W. E., & McCallum, M. (2003). The alliance as mediator of expectancy effects in short-term individual therapy. *Journal of Consulting and Clinical Psychology, 71*, 672-679.

Kerig, P. K. (2000). Introduction and overview: Conceptual issues in family observational research. In P. K. Kerig & K. M. Lindahl (Eds.), *Family observational coding systems: Resources for systemic research* (pp. 1-22). Mahwah, NJ: Lawrence Erlbaum.

Lobitz, G., & Johnson, S. (1975). Parental manipulation of the behavior of normal and deviant children. *Child Development, 46*, 719-726.

Locke, L. M., & Prinz, R. J. (2002). Measurement of parental discipline and nurturance. *Clinical Psychology Review, 22*, 895-929.

Markie-Dadds, C., Sanders, M. R., & Turner, K. M. T. (1999). *Every parent's self-help workbook*. Milton, Australia: Families International.

Morawska, A., & Sanders, M. R. (2006). Self-administered behavioural family intervention for parents of toddlers: Part I—Efficacy. *Journal of Consulting and Clinical Psychology, 74*, 10-19.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castalia.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1992). *Antisocial boys*. Eugene, OR: Castalia.

Robinson, E. A., & Eyberg, S. M. (1981). The dyadic parent-child interaction coding system: Standardization and validation. *Journal of Consulting and Clinical Psychology, 49*, 245-250.

Rosenthal, R. (1966). *Experimenter effects in behavioral research*. New York: Appleton-Century-Crofts.

Sanders, M. R. (1999). Triple P-Positive Parenting Program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Clinical Child and Family Psychology Review, 2*, 71-90.

Sanders, M. R., Markie-Dadds, C., & Turner, K. M. T. (1996). *Every parent's survival guide* [Video]. Brisbane, Australia: Families International.

Spencer, F. W., Corcoran, C. A., Allen, G. J., Chinsky, J. M., & Veit, S. W. (1974). Reliability and reactivity of the videotape technique on a ward for retarded children. *Journal of Community Psychology, 2*, 71-74.

Stoolmiller, M., Eddy, J. M., & Reid, J. B. (2000). Detecting and describing preventive intervention effects in a universal school-based randomized trial targeting delinquent and violent behavior. *Journal of Consulting and Clinical Psychology, 68*, 296-306.

Tinsley, H. E. A., Workman, K. R., & Kass, R. (1980). Factor analysis of the domain of client expectancies about counseling. *Journal of Counseling Psychology, 27*, 561-570.

Tryon, W. W. (1998). Behavioral observation. In A. S. Bellack & M. Hersen (Eds.), *Behavioral assessment: A practical handbook* (pp. 79-103). Needham Heights, MA: Allyn & Bacon.

Turner, K. M. T., Markie-Dadds, C., & Sanders, M. R. (1996). *Triple P tip sheet series for toddlers*. Brisbane, Australia: Families International.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology, 66*, 715-730.

Alina Morawska is a lecturer at the School of Psychology, University of Queensland, and a training consultant for Triple P International. Alina completed her PhD in clinical psychology at the University of Queensland in 2004, for which she received the Australian Psychological Society's Excellent PhD Thesis in Psychology Award. Her research interests are in the area of prevention and early intervention of child behavioral and emotional problems. As a training consultant, she conducts training for allied health professionals in the delivery of the Triple P–Positive Parenting Program. She also conducts private practice services in which she specializes in the prevention and management of childhood emotional and behavioral problems.

Matthew R. Sanders is the director of the Parenting and Family Support Centre at the University of Queensland and a professor in clinical psychology. During the past 20 years, he has gained an international reputation for scientific research into childhood behavior problems and family intervention. He has written numerous articles on child and family intervention for scientific journals and has authored several books on the treatment of children's behavior problems. He is past national president of the Australian Association of Cognitive Behaviour Therapy (AACBT), and in 1996 he won a Distinguished Career Award from the AACBT.